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Michael G. Luchs
College of William and Mary, michael.luchs@mason.wm.edu

Minu Kumar
San Francisco State University, mkumar@sfsu.edu

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"Yes, but this Other One Looks Better/Works Better": How do Consumers Respond to Trade-offs Between Sustainability and Other Valued Attributes?

Michael G. Luchs[1] · Minu Kumar[2]

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Abstract Consumers are increasingly facing product evaluation and choice situations that include information about product sustainability, i.e., information about a product's relative environmental and social impact. In many cases, consumers have to make decisions that involve a trade-off between product sustainability and other valued product attributes. Similarly, product and marketing managers need to make decisions that reflect how consumers will respond to different trade-off scenarios. In the current research, we study consumer responses across two different possible trade-off scenarios: one in which consumers face a trade-off between product sustainability and hedonic value, and another in which they must trade-off between product sustainability and utilitarian value. Our results suggest that, overall, consumers are more likely to trade-off hedonic value (e.g., esthetics) for sustainability than to trade-off utilitarian value (e.g., functional performance) for sustainability. In Studies 1A and 1B, we presented participants with a product choice task and also measured their anticipatory emotions as they contemplated their options. The results suggest that given a trade-off, consumers are more likely to choose a sustainable product when they have to trade-off hedonic value than when they have to trade-off utilitarian value. Further, these studies provide some insight into the emotions underlying this effect. In Study 2, we use a different consumer response measure, relative purchase likelihood, and investigate the effect of trade-off type across categories that vary in the degree to which hedonic and utilitarian attributes are perceived to be important (referred to as 'product type'). Our results suggest that the effect of trade-off type still holds, yet is moderated by product type such that consumers' greater willingness to trade-off hedonic value (vs. utilitarian value) for sustainability is attenuated as the relative importance of hedonic (vs. utilitarian) attributes increases. In addition to building on our theoretical understanding of decision making given trade-offs with moral attributes, this research is also intended to support managers as they define and choose among various strategic, product development, and marketing promotion options.

Keywords Sustainability · Attribute trade-offs · Ethical consumption · Sustainable products

Introduction

Based in part on their understanding of consumer needs and wants, product and marketing managers endow products with different types of benefits and values through the design and development process (Madhavan and Grover 1998). Once these products are in the market, consumers' responses are influenced by the various trade-offs often embodied in the available product options (Bettman et al. 1998). The current research addresses consumer responses to products—specifically, choice and relative purchase likelihood—within the context of information about product sustainability given the growing interest in sustainability by consumers (BBMG 2011), the growing importance of sustainability and ethical consumption to

✉ Minu Kumar
mkumar@sfsu.edu

Michael G. Luchs
michael.luchs@mason.wm.edu

[1] The College of William and Mary, P.O. Box 8795, Williamsburg, VA 23187-8795, USA

[2] San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132, USA

companies (Boston Consulting Group 2009; Chouinard et al. 2011; McKinsey & Company 2011), and ongoing calls by academics for more research (Kotler 2011; Sheth et al. 2011; Theotokis and Manganari 2014; Vitell 2003).

It is likely that the relevance and importance of research on sustainability—from both a consumer and a managerial point of view—will continue to grow as more information about product sustainability is provided to consumers directly through labels on products (Parguel et al. 2011) as well as indirectly through third-party websites (e.g., http://www.goodguide.com/). However, although many consumers articulate strong support for sustainability, a disproportionately lower number of consumers actually purchase products identified as more sustainable (UNEP 2005), contributing to their low market share (Peloza et al. 2012). Building on the idea that consumers often infer a trade-off between sustainability and other product attributes (Lin and Chang 2012; Luchs et al. 2010), the objective of the current research is to contribute to our understanding of when and why consumers will respond favorably to a product that is more sustainable, despite an explicit trade-off with other valued attributes.

Specifically within the context of trade-offs involving product sustainability and functional performance, prior research provides evidence suggesting that consumers tend to choose products with superior functional performance over products with superior sustainability characteristics (Lindgren et al. 2009; Luchs et al. 2012) and antecedent emotions such as confidence and guilt play an important role in these choices (Luchs et al. 2012; Stenhaut and Kenhove 2006; Theotakis and Manganari 2014). Further, this stream of research demonstrates that this preference for performance over sustainability is moderated by consumers' attitude towards sustainability which influences the degree to which they experience various emotions when contemplating their choices (Luchs et al. 2012; Steenhaut and Kenhove 2006). However, prior research has also demonstrated that different types of product attribute trade-offs, such as those involving utilitarian and hedonic attributes, can have different emotional and behavioral consequences (Chitturi et al. 2007, 2008). Thus, the current research builds on prior research addressing trade-offs involving sustainability by investigating consumers' response to products that present a trade-off either between product sustainability and utilitarian value, or between product sustainability and hedonic value (henceforth, 'trade-off type'). More generally, given a trade-off with product sustainability, does trade-off type matter?; and, if so, when and how? Beyond the potential theoretical value of providing insight into these questions, this research is also intended to support managers as they define and choose among various strategic and product development options during the development of relatively more sustainable products. Further, the findings from this research may help guide managers as they develop positioning and promotion strategies for these products, especially when their superior sustainability presents consumers a trade-off, real or perceived, with other valued attributes.

The remainder of the article is organized as follows. We begin by developing predictions for consumer response given these different trade-offs based on the underlying goals and anticipatory emotions. We also develop predictions for the moderating effects of consumers' attitudes towards sustainability and product type, where product type refers to the degree to which hedonic and utilitarian attributes are perceived to be relatively important. We then describe three studies that test our predictions. In Studies 1A and 1B, we present participants with a product choice task and also measure their anticipatory emotions as they contemplate their options. In Study 2, we investigate this effect across categories that vary in the degree to which hedonic and utilitarian attributes are perceived to be important. We also use a different consumer response measure in Study 2: relative purchase likelihood. We conclude with a discussion of the theoretical contributions and managerial implications of the findings from these studies.

When and Why Might Consumers Respond More Favorably Towards a Trade-off Between Sustainability and Hedonic value (vs. Utilitarian Value)?

Trade-off Goals, Emotions, and Consumer Response

While our research focus is on consumer responses to trade-offs involving sustainability, we develop our predictions by drawing on research that has studied the roles of goals and emotions in the context of consumer decision making. For example, choice and the emotional antecedents of choice can be explained in part based on regulatory fit theory (Higgins 1997) in which behavior can be understood as goal pursuit and the individual's desire to pursue gains, i.e., promotion-oriented goals, or avoid pains, i.e., prevention-oriented goals. Anticipation and fulfillment of goals evokes positive emotions, whereas non-fulfillment of anticipated goals evokes negative emotions (Higgins 1997). Thus, within the current context, we can understand consumers' emotional and behavioral responses to products based on their appraisal of product attributes and the goals that they can potentially fulfill (Chernev 2004; Chitturi et al. 2007, 2008).

Others have characterized utilitarian attributes as relatively more prevention oriented and hedonic attributes are relatively more promotion oriented (Chernev 2004).

According to Higgins (1997), prevention goals are characterized by desires such as 'behaving in a safe and secure manner' or 'being responsible,' and promotion goals are characterized by desires such as 'looking cool' or 'being sophisticated.' As such, the choice of utilitarian attributes has been shown to be a consequence of prevention-oriented emotions, such as confidence (Chitturi et al. 2007; Higgins 2001; Luchs et al. 2012), whereas compromising utilitarian attributes is associated with distress (Luchs et al. 2012). Conversely, the choice of hedonic attributes has been shown to be a consequence of promotion-oriented emotions; choosing a product with hedonically superior attributes is associated with greater excitement, whereas compromising hedonic attributes is associated with disappointment (Chitturi et al. 2007; Higgins 2001). Predicting choice in the current context, however, depends on understanding what goals might be satisfied (or sacrificed) when considering a trade-off with sustainability, where sustainable products have been described as products that reflect positive moral principles (Irwin and Baron 2001, 2009) related to a variety of social issues, e.g., fair labor practices, and environmental issues, e.g., avoiding pollution (Luchs et al. 2010).

Trading-off Sustainability and Utilitarian Value

First, consider the context of a consumer contemplating a choice of a product with greater utilitarian value, e.g., functional performance, over a more sustainable product. As discussed previously, utilitarian attributes fulfill prevention goals, leading to greater confidence. In addition, the emotions experienced in this context are also likely to reflect unfulfilled goals. Prior research has shown that choosing utilitarian attributes can lead to less guilt, such as in the context of a trade-off with hedonic attributes (Kivetz and Simonson 2002), because choosing the former is the morally superior decision (Chitturi et al. 2007). However, prior research in this journal (Steenhaut and Kenhove 2006; Theotokis and Manganari 2014) and elsewhere (Luchs, et al. 2012; Peloza et al. 2012; Tangney et al. 2007) has shown that not choosing greater sustainability can also lead to feelings of guilt. Thus, choosing in favor of utilitarian value can lead to either less guilt or more guilt depending on what is being traded off. In the current context, consistent with Luchs et al. (2012), we would expect a choice of greater utilitarian value over sustainability to lead to greater feelings of guilt given that choosing utilitarian value is the morally inferior decision.

What emotions are likely to be evoked if consumers instead contemplate choosing the alternative product that offers superior sustainability, but inferior utilitarian value? Prior work by Luchs et al. (2012) has shown that consumers who favor a product alternative that offers greater sustainability but inferior functional performance can experience feelings of distress because their functional performance needs are being compromised. However, choosing sustainability over utilitarian value may appeal to consumers given that it can signal self-identity (Batson and Shaw 1991). For example, compromising functional performance in favor of sustainability can be perceived as sacrificing the relatively self-serving short-term goal of fulfilling functional performance needs in favor of the greater good of society. Decisions that involve making personal sacrifice for the greater good of society evoke a feeling of pride, which has been described as a pleasant emotion in response to meeting internalized social standards (Orth et al. 2010; Tracy and Robins 2004). Therefore, choosing a more sustainable product over a product with superior functional performance is likely to evoke not only distress but also pride.

Trading-off Sustainability and Hedonic Value

Next, consider the context of a consumer contemplating the choice of a product with superior hedonic value, e.g., superior esthetics, over a more sustainable product. As discussed previously, hedonic attributes can fulfill promotion goals leading to greater excitement (Chitturi et al. 2007). However, similar to the context of a trade-off with functional performance, choosing esthetics over sustainability will also lead to feelings of guilt (Peloza et al. 2012) given that esthetics is, once again, the morally inferior option.

Considering the alternative situation in which a consumer is contemplating the choice of a product that is more sustainable over a product with superior hedonic value, once again we would expect the consumer to feel a sense of pride given that they are forgoing an option that benefits them personally in favor of an option whose benefits are primarily other oriented. In contrast to the prior trade-off between sustainability and utilitarian value, however, we expect the primary negative emotion resulting from the non-fulfillment of the goals attainable through hedonic value to be disappointment. Although similar in valence to distress, this disappointment reflects the non-fulfillment of a fundamentally different goal—self-promotion—which others have shown to be a consequence of a choice that compromises on esthetics (Chitturi et al. 2007) and which we also expect in the unique context of this trade-off between hedonic value and sustainability.

In summary, we have argued that the emotional consequences of choosing (or trading-off) sustainability depend on whether consumers are trading-off sustainability for utilitarian value or hedonic value, as illustrated in Fig. 1. Next, we address the focal question of our research: does consumer response, when considering a trade-off with sustainability, depend on what is being traded off?

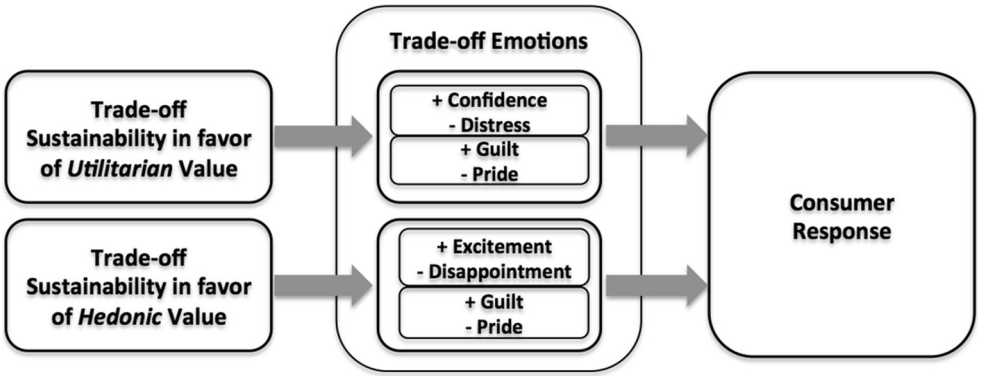

Fig. 1 Consumer response to a trade-off with sustainability depends on what is being traded off

Relative Purchase Likelihood and Choice of Utilitarian Value Over Sustainability Versus Hedonic Value over Sustainability

Prior research suggests that as conflict in decision making increases, consumers' decision process shifts from a focus on desirability to justifiability (Sela et al. 2009; Shafir et al. 1993). For example, it is easier to justify the choice of a more utilitarian product over a more hedonic product (Kivetz and Simonson 2002), in part due to the greater guilt associated with choosing hedonic value over utilitarian value (O'Curry and Strahilevitz 2001; Peloza et al. 2012; Strahilevitz and Myers 1998). We extend this logic to the current context in which we can consider which type of attribute value, utilitarian or hedonic, is easier to justify choosing over sustainability. We propose that it is especially difficult to justify the choice of hedonic value over sustainability since hedonics is typically viewed as a "want," i.e., a luxury, and hedonics, in this context, is more clearly the morally inferior option. While choosing utilitarian value over sustainability can also induce feelings of guilt, it can be more easily justified given the fulfillment of a perceived need.

Further, while we would expect consideration of the more sustainable option to induce feelings of pride in either trade-off contexts, we would expect the intensity of pride felt to be greater in the context of choosing sustainability over hedonics rather than choosing sustainability over utilitarian value. Recall that pride has been described as a pleasant emotion in response to meeting internalized social standards (Tracy and Robins 2004) that can derive from making personal sacrifice for the greater good of society. In this case, compromising on hedonics is especially likely to be viewed as a personal sacrifice since hedonics is relatively more closely aligned with the consumer's identity given the self-promotion goal that it addresses. Therefore, the greater pride evoked when considering sustainability in the context of a trade-off with hedonic value (vs. utilitarian value) also suggests that consumers are relatively more likely to choose utilitarian value (vs. hedonic value) over sustainability.

In addition to the joint effect of guilt and pride, it is also plausible that consumers are more likely to choose utilitarian value (vs. hedonic value) over sustainability due to the greater confidence (and lower distress) experienced when choosing a relatively more utilitarian product. Consistent with the precedence principle (Berry 1994; Lindgren et al. 2009), Chitturi, et al. (2007) demonstrate that consumers choose utilitarian value over hedonic value due in part to the greater confidence in an option that satisfies their prevention goals despite the greater excitement offered by superior hedonics. Similarly, we expect the relative choice likelihood of superior utilitarian value over sustainability (vs. superior hedonic value over sustainability) to be influenced by the greater confidence (and lower distress) offered by superior utilitarian value (vs. superior hedonic value). Formally, and from the perspective of consumer response to sustainable products given a trade-off with either utilitarian value or hedonic value, we propose the following:

H1 Consumer response depends on trade-off type such that consumers will respond more (less) favorably to a product that trades off hedonic value (utilitarian value) for sustainability.

Next, we have argued that choice in the current context depends on consumers' resolution of the competing goals presented by the different choice options. However, some goals may be more (or less) important to different consumers. Compared with utilitarian and hedonic value, it is likely that there is significantly more variance in consumers' attitude towards sustainability and, therefore, variance in the relative importance of the competing goals in the current context. Differences in the degree to which consumers value the concept of sustainability have been shown to predict consumers' responses to firms' corporate social responsibility (CSR) activities (Bhattacharya and Sen 2003), their willingness to pay a premium for

sustainable products (Trudel and Cotte 2009), and to influence their product choices (Auger et al. 2008). Therefore, we might also expect that the aforementioned predicted greater guilt evoked by the product with superior hedonic value (vs. superior utilitarian value) would also depend on consumers' attitude towards sustainability. Similarly, while choosing sustainability over hedonics is likely to evoke feelings of pride, we would also expect the intensity of pride felt to also depend on consumers' attitude towards sustainability given that this emotion depends on the degree to which the consumer's identity is associated with relatively more sustainable choices. Therefore, we would expect that consumers will experience greater guilt (pride) when considering a choice of superior hedonic value (sustainability) over sustainability (hedonic value) as their attitude towards sustainability becomes more positive, thus increasing the likelihood of choosing the more sustainable option. We depict this moderating effect of Attitude towards Sustainability in Fig. 2. Formally, we propose the following:

H2 The effect of trade-off type on consumer response described in H1 is moderated by consumers' attitude towards sustainability such that consumers will respond more favorably to a trade-off with hedonic value (vs. utilitarian value) as their attitude towards sustainability becomes more positive.

Finally, just as we have argued that consumers vary in the degree to which product attribute-related goals are relatively more or less important, the nature of the product itself is also likely to have an effect on goal salience. Specifically, we could expect to find that the salience of promotion (prevention)-related goals would be higher in relatively more hedonic (utilitarian) product categories, or types. Thus, as shown in Fig. 2, we would expect the focal effect of trade-off type to be moderated by product type (hedonic vs. utilitarian) since the variance of goal salience across product types will have an effect on the anticipatory emotions and subsequent consumer responses described in H1. Formally, we propose the following:

H3 The effect of trade-off type on consumer response described in H1 is moderated by product type such that consumers' more (less) favorable response to a trade-off with hedonic value (utilitarian value) is attenuated (amplified) as the relative importance of hedonic (utilitarian) attributes increases.

Next, we proceed with describing a series of three studies intended to provide evidence relative to these hypotheses.

Study 1A: Choice Given a Trade-off Between Sustainability and Either Utilitarian Value or Hedonic Value

The primary objective of Study 1 was to demonstrate that consumer response, in the context of a trade-off with sustainability, depends on the type of attribute value that is being traded off: hedonic or utilitarian (H1). In this study, we operationalized consumer response as a forced choice between two products. We also sought to demonstrate that the effect of trade-off type on consumer response depends on consumers' attitude towards sustainability (H2).

Stimuli and Procedure

One hundred and forty-nine undergraduate students participated in an online survey in exchange for course extra credit. Participants were presented with a choice between two kitchen blenders that were described as differing along two dimensions, as shown in Fig. 3. In this study and subsequent studies, we follow prior precedent in operationalizing utilitarian value as product functional performance, and hedonic value as product esthetics (e.g., Chitturi et al. 2007, 2008; Hirschman and Holbrook 1982). In the first condition, one product was superior (inferior) with respect to its sustainability (product performance), whereas the other was superior (inferior) with respect to its product performance (sustainability). In the second

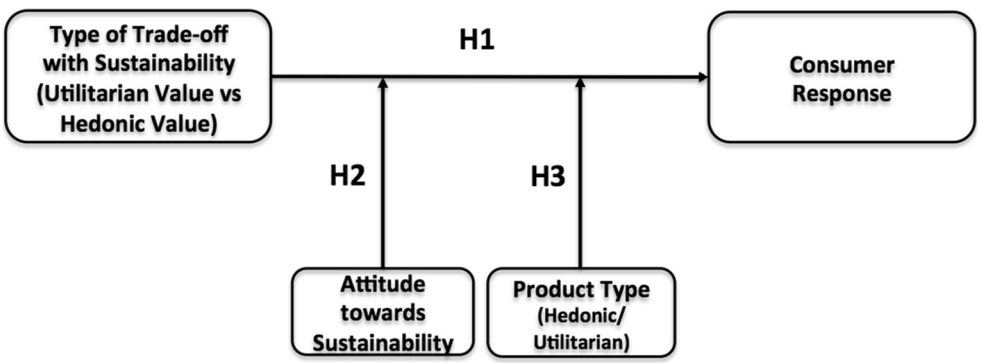

Fig. 2 Model of consumer response given a trade-off between sustainability and utilitarian value/hedonic value

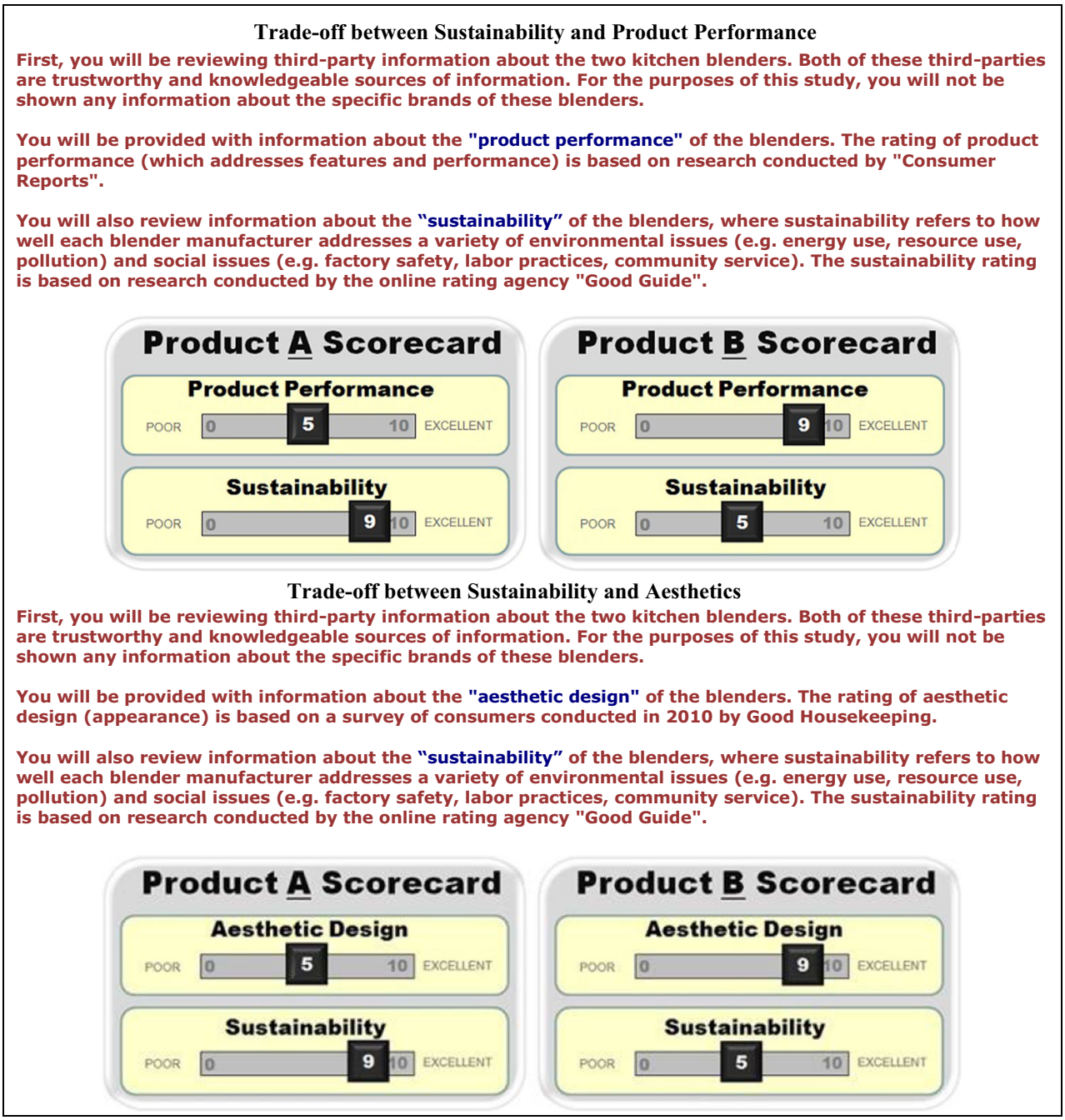

Fig. 3 Study 1A stimuli

condition, participants were presented with a similar trade-off with sustainability; however, instead of a trade-off with product performance, the trade-off was described as a choice between superior sustainability and superior esthetic design. Participants were instructed to assume that the kitchen blenders did not differ with respect to their cost or esthetic design/product performance, depending on the condition. Further, the order of presentation of the two blender scorecards was counterbalanced on the left versus right of the screen, and all manipulations were conducted between subjects. Therefore, this study used a 2 (trade-off type: utilitarian vs. hedonic) × 2 (order: superior utilitarian/hedonic option on the left {right}, superior sustainability on the right {left}) between-subjects design.

After reviewing the information about their respective choice scenarios, participants were asked to imagine that they were leaning towards choosing Blender A and were instructed to indicate the intensity with which they were

feeling six different emotions, presented in random order: pride, guilt, confidence, distress, excitement, and disappointment. Participants rated the intensity of these emotions on a 1 (not at all) to 9 (very high) scale. These ratings reflect participants' self-assessed anticipatory emotions, i.e., emotions that are caused by the decision problem itself (Loewenstein and Lerner 2003; Pfister and Bohm 2008). After providing their ratings for Blender A, participants provided similar ratings assuming that they were leaning towards choosing Blender B (see Chitturi et al. 2007 for a similar protocol).

After rating their anticipatory emotions, participants were asked to make a choice between the two blenders. Finally, participants rated the degree to which they agreed with the following three statements, on a scale of 1 (strongly disagree) to 7 (strongly agree): "The issue of corporate social responsibility is important to me (e.g., factory safety, fair labor practices, community service)," "The issue of corporate environmental responsibility is important to me (e.g., recycling, energy efficiency, minimizing pollution)," and "It is important to me that companies maintain high ethical standards in general." These three measures were intended to collectively serve as our measure of consumers' attitude towards sustainability (Luchs et al. 2012).

Results

Data Preparation

Prior to the analyses, given that the placement of the blenders had been counterbalanced on the left versus right, all of the product ratings were converted such that the blender with superior product performance (or esthetics) was always anchored at the low end of the scale (−4) and the blender with superior sustainability was always anchored at the high end of the scale (+4), with zero as the neutral point.

With respect to the measures of emotions, correlation analysis confirmed that our three pairs of emotions—pride and guilt, confidence and distress, excitement and disappointment—were related as expected (all pairs were inversely related, $p < 0.0001$). In this study and the next study, we combine these inversely related emotion pairs, i.e., treating each pair as opposing ends of a continuum of emotion experienced based on the fulfillment/non-fulfillment of the same goal (e.g., the fulfillment/non-fulfillment of a prevention goal related to utilitarian value leading to confidence/distress, respectively). This approach is consistent with Luchs et al. (2012) and follows the logic of a dimensional view of emotions (Fontaine et al. 2007; Smith and Ellsworth 1985), whereby related emotions, such as pride and guilt, can be differentiated based in part on their opposing valence. Therefore, we created three new variables, each representing the difference between two inversely related emotions: pride–guilt, confidence–distress, and excitement–disappointment (for simplicity, we refer to these subsequently by their positively valenced anchor, i.e., pride, confidence, and excitement).

Product Choice and the Effect of Trade-off Type

Next, we used a series of logistic regression models to analyze choice likelihood, initially within each condition, and then choice likelihood across conditions. Within the utilitarian trade-off condition, significantly more participants chose utilitarian value over sustainability (68:7), $\chi^2 = 32.81$ $p < 0.0001$. However, there was no significant difference in choice likelihood when the choice was between superior hedonic value and superior sustainability (42:32), $\chi^2 = 1.34$, $p > 0.10$, suggesting that participants were relatively more willing to trade-off hedonic value for sustainability than to trade-off utilitarian value for sustainability. Next, we analyzed choice between conditions, employing contrast codes for each condition, and confirmed that choice depends on trade-off type, $\chi^2 = 18.84$, $p < 0.0001$. This result supports our focal hypothesis, H1, which predicts that consumer response—given a trade-off with sustainability—depends on the type of trade-off such that consumers will respond relatively more favorably to a product that trades off hedonic value (vs. utilitarian value) for sustainability.

In an effort to gain some insight into this effect, we performed a mediation analysis to identify which emotions mediated the effect of trade-off type on choice. A bootstrapped parallel mediation analysis, per Hayes (2013), suggested that of the three emotion pairs, only confidence mediated the effect of trade-off type on choice at the 95 % confidence level (mean indirect effect = 0.2488, bias corrected and accelerated lower CI 0.0132, upper CI 0.6689; 5000 samples). In other words, participants were more likely to choose the product with superior utilitarian value (vs. hedonic value) due to the greater confidence (and lower distress) that it evoked relative to the more sustainable product.

The Effect of Consumers' Attitude Towards Sustainability

Next, we sought to understand whether these results depended on consumers' attitude towards sustainability. A correlation analysis confirmed that the three questions about attitude towards sustainability were significantly correlated, Cronbach $\alpha = 0.88$; they were subsequently averaged to create a measure of attitude towards sustainability (AtS). Then, using logistic regression, we regressed choice on the trade-off type, AtS and their interaction.

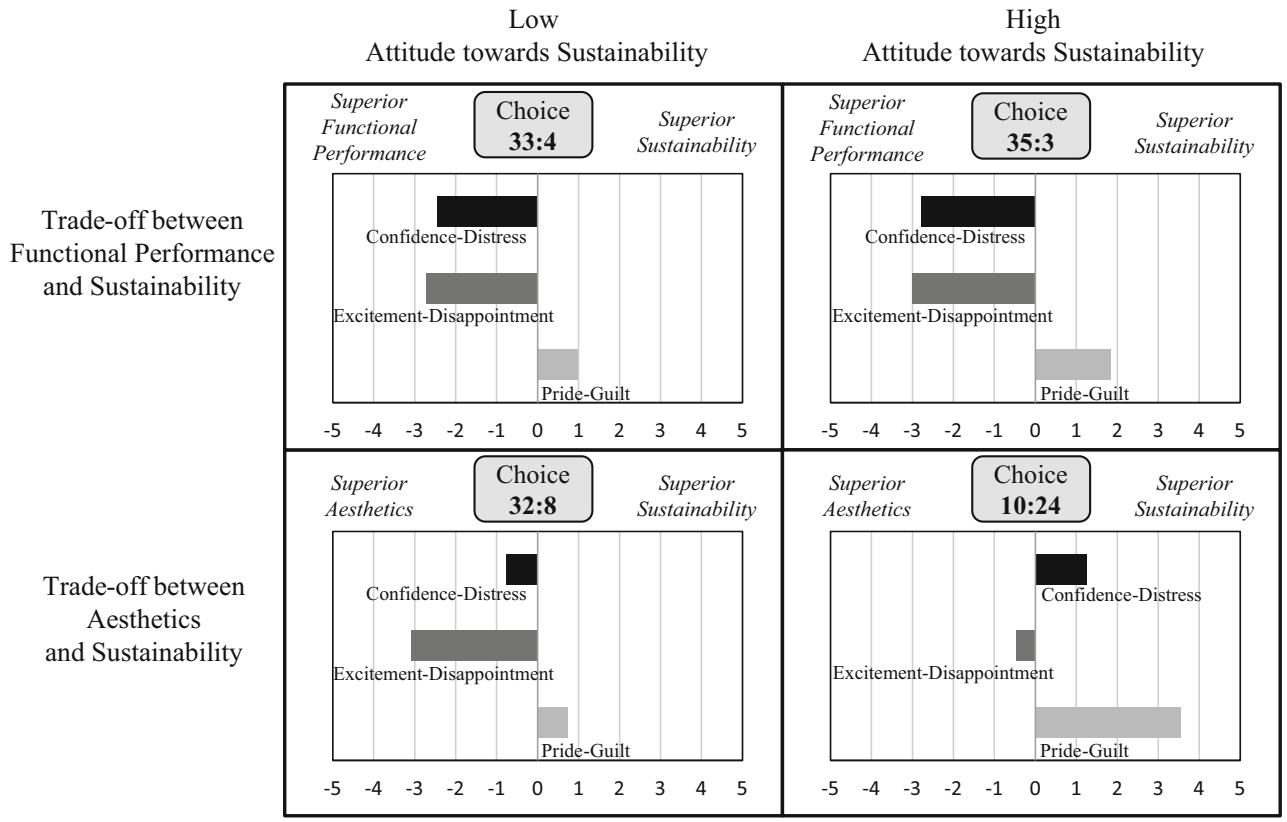

Fig. 4 Choice likelihood and differences in relative emotion intensities depend on trade-off type and attitude towards sustainability (Study 1A)

There was a simple effect of AtS on Choice, $\chi^2 = 10.12$, $p < 0.01$, such that the likelihood of choosing the more sustainable product increased as AtS increased. While trade-off type did not have a simple effect, $\chi^2 = 2.33$, $p > 0.10$, it did significantly interact with AtS to predict choice, $\chi^2 = 5.41$, $p = 0.02$, in support of H2. To illustrate this effect, we created two groups based on a median split of AtS and analyzed the choice likelihoods within each group and condition.[1] As illustrated in Fig. 4, choice was biased against the sustainable option in three of the four cells (all $\chi^2 > 12.00$, $p < 0.001$); however, choice was biased in favor of the sustainable option among participants with relatively higher AtS scores, but only within the superior hedonic value trade-off condition, $\chi^2 = 5.41$, $p = 0.02$.

Given this significant interaction, we sought to understand which emotion(s) mediated this joint effect of trade-off type and AtS on choice. In other words, we sought to understand why the effect of trade-off type on choice depended on AtS. We began by inspecting the pattern of emotions, illustrated in Fig. 4, which appear to show a unique pattern of emotion within the hedonic trade-off condition when the score for attitude towards sustainability is relatively high, consistent with the aforementioned results with respect to choice. A bootstrapped moderated parallel mediation analysis, per Hayes (2013), suggested that the moderated effect of trade-off type on choice by AtS was due to both confidence and excitement. On the one hand, there were no significant indirect effects within the functional performance trade-off condition; in other words, the emotional outcomes were similar for all participants, regardless of AtS, when confronted with a trade-off between functional performance and sustainability. However, inspection of the conditional indirect effects suggested that within the hedonic value trade-off condition, confidence was a significant mediator of the effect of AtS on choice at the 95 % confidence level (mean indirect effect = 0.1911, bias corrected and accelerated lower CI 0.0115, upper CI 0.4917; 5000 samples) as was Excitement (mean indirect effect = 0.2378, bias corrected and accelerated lower CI 0.0371, upper CI 0.5866; 5000 samples). Pride was not found to be a significant mediator, however.

These results seem to imply that Pride did not play a role in the current context which is somewhat surprising

[1] We used a median split to enable a simple illustration of the effect in Fig. 4. A separate analysis conducted using Hayes' (2013) PROCESS algorithm found that the moderator value defining the Johnson–Neyman significance region for the interaction was 6.3, suggesting that a median split, at a value of 7, is appropriate.

Model	Indirect effect paths	Indirect Effect	Lower CI	Upper CI
1	Attitude towards Sustainability → Pride (Guilt) → Choice	-0.0478	-0.1647	0.0188
2	Attitude towards Sustainability → Pride (Guilt) → Excitement (Disappointment) → Choice	**0.0642**	**0.0163**	**0.1709**
3	Attitude towards Sustainability → Pride (Guilt) → Confidence (Distress) → Choice	**0.0230**	**0.0015**	**0.0818**
4	Attitude towards Sustainability → Pride (Guilt) → Excitement (Disappointment) → Confidence (Distress) → Choice	**0.0268**	**0.0054**	**0.0848**
5	Attitude towards Sustainability → Excitement (Disappointment) → Choice	0.0231	-0.1233	0.1818
6	Attitude towards Sustainability → Excitement (Disappointment) → Confidence (Distress) → Choice	0.0096	-0.0502	0.0893
7	Attitude towards Sustainability → Confidence (Distress) → Choice	0.0502	-0.0530	0.2079

Fig. 5 In Study 1A, pride (guilt) had an indirect effect on choice through both excitement (disappointment) and confidence (distress). * Significant indirect effects paths (2, 3, and 4) noted in *bold* (confidence level = 95 %, 5000 samples)

given the apparent difference in Pride within the hedonic trade-off condition when attitude towards sustainability is relatively high, as shown in Fig. 4. Indeed, a post hoc analysis suggested that pride might have indirectly played a significant role on choice through its effect on confidence and excitement. To explore this possibility, we performed a bootstrapped serial mediation analysis, per Hayes (2013). This analysis enables an examination of various possible causal relationships among multiple mediators, in this case the three potential emotional mediators of the effect of AtS on choice. As shown in Fig. 5, three indirect path models were found to be significant by virtue of the range of effect estimates (lower CI to upper CI) having a consistent sign (i.e., not including an estimate of zero) at a 95 % confidence level: paths 2, 3, and 4. All three of these effect paths are consistent in suggesting that the level of anticipatory pride felt affects the levels of confidence and excitement felt, which in turn affect choice. While these results are not definitive since we did not experimentally manipulate Pride, and therefore causation cannot be firmly established, they are consistent with our argument that differences in anticipatory pride and guilt may have an important, albeit indirect, role to play in the current context involving trade-offs between sustainability and other valued attributes.

The results from Study 1A suggest that in the context of a trade-off with sustainability, the type of trade-off—utilitarian value or hedonic value—does indeed affect choice (H1). Our results also suggest that this effect is moderated by consumers' attitude towards sustainability (H2). In the context of a trade-off between utilitarian value and sustainability, our results suggest that consumers are more likely to choose the product with greater utilitarian value regardless of their attitude towards sustainability. However, in the context of a trade-off between sustainability and hedonic value, choice likelihood depends on consumers' attitude towards sustainability such that consumers are relatively more likely to choose the more sustainable product as their attitude towards sustainability becomes more positive. Further, our analyses provide some insight into the goal-derived, emotion-based mechanism underlying these effects.

While Study 1A provides substantial evidence in support of our hypotheses, several questions remain. First, Study 1A employed a forced choice scenario. It is likely that some participants would not have chosen either of the options and that this might have influenced the results, especially given that the choice task itself and the way the options are structured is likely to have evoked emotions (Luce et al. 1997; Theotokis and Manganari 2014). Second, the context of Study 1A was limited to kitchen blenders, which is a relatively utilitarian product category. The purpose of Study 1B was to provide additional support for our first two hypotheses as well as to study these effects across product categories that vary with respect to their perceived relative hedonic/utilitarian value.

Study 1B: Extending Findings to a Non-forced Choice Context and an Initial Investigation of the Effect of Product Type

The primary objectives of Study 1B were to provide replication of our key findings from Study 1 in a choice context that allowed participants to "opt out," as well as across product categories that differ in the degree to which they are perceived to offer relatively more utilitarian or hedonic value.

Stimuli and Procedure

Two hundred and forty-seven undergraduate students participated in this online study in exchange for course extra credit. Participants were presented with a choice scenario similar to the one presented in Study 1A in which two products were described as differing along two dimensions. The same scorecard format was used, and the products were described as being superior with respect to either product performance/esthetic design, or superior with respect to sustainability. Two different product categories were used this time; we chose calculators and digital audio players in an effort to represent products that are relatively more utilitarian or hedonic in nature, respectively, given prior research on the effect of this product dimension on choice (Dhar and Wertenbroch 2000). Further, Study 1B employed a non-forced choice scenario, enabling participants to "opt out" if they did not want to choose either products. Once again, the order of presentation of the two product scorecards was counterbalanced on the left versus right of the screen and all manipulations were conducted between subjects. Therefore, Study 1B used a 2 (trade-off type: utilitarian vs. hedonic) × 2 (product type: utilitarian vs. hedonic) × 22 (order: superior utilitarian/hedonic option on the left {right}, superior sustainability on the right {left}) between-subjects design. Participants were once again instructed to assume that the products did not differ with respect to their cost or product performance/esthetic design, depending on the condition.

The same procedure was used in Study 1B, as in Study 1A, to measure the relative intensity of participants' emotions when considering either options. After rating their emotions, participants were asked to make a choice between the two products, or to indicate instead "neither." They also indicated how likely it was that they would actually purchase a product in the focal product category (i.e., "in the prior 5 years or next 5 years") from 1 (very unlikely) to 7 (very likely), and they rated all three product categories used in both Studies 1A and 1B (kitchen blenders, calculators, and digital audio players) using four items from Voss et al. (2003) hedonic/utilitarian scale (from 1 to 7): "impractical–practical," "not fun–fun," "not helpful–helpful," "dull–exciting." Finally, they responded to the same three questions using Study 1A in order to measure their attitude towards sustainability.

Results

Data Preparation

Prior to the analysis, all of the product ratings were converted such that the product with superior product performance (or esthetics) was always anchored at the low end of the scale (−4) and the product with superior sustainability was always anchored at the high end of the scale (+4), with zero as the neutral point. Correlation analysis once again confirmed that the three pairs of emotions—pride and guilt, confidence and distress, excitement and disappointment—were related as expected (all pairs were inversely related, $p < 0.0001$) and we created three new variables, each representing the difference between the pairs of inversely related emotions (once again referred to subsequently as pride, confidence, and excitement for simplicity).

Next, we created a single measure for each product category's relative hedonic versus utilitarian value by subtracting the scores for "practical" and "helpful" from the scores for "fun" and "exciting." A series of t-tests confirmed that the average composite score for digital audio players ($M_{\text{Dig}} = 2.17$) was significantly higher than the mid-point of zero, $F(1, 246) = 171.29$, $p < 0.0001$, suggesting that digital audio players are a relatively hedonic product category. The average composite score for calculators ($M_{\text{Calc}} = -6.75$) was significantly lower than the mid-point of zero, $F(1, 246) = 965.56$, $p < 0.0001$, suggesting that calculators are a relatively utilitarian product category. As a reference, the average composite score for the kitchen blender category ($M_{\text{Kitch}} = -4.26$), used in Study 1A, was also significantly lower than the mid-point of zero, $F(1, 246) = 299.44$, $p < 0.0001$.

Opt Out

Of the 247 participants in this study, only 22 chose the "neither product" option. Using contrast codes within a logistic regression to represent the "neither" option versus choosing one of the products, we determined that the measure of how likely participants were to purchase a product in the identified category was a significant predictor, $\chi^2 = 7.45$, $p < 0.01$, suggesting that choosing to opt out was based on a lack of interest or perceived need for the product and was not, therefore, an unintended consequence of the study stimuli or choice task. Thus, these participants were dropped from subsequent analyses (having made no choice), leaving 225 participants for analysis.

Product Choice and the Effect of Trade-off Type

Once again, we used a series of logistic regression models to analyze choice likelihood, initially within each trade-off type condition, and then choice likelihood across trade-off type conditions. Within the utilitarian trade-off condition, significantly more participants chose utilitarian value over sustainability (108:8), $\chi^2 = 50.45$, $p < 0.0001$. However, consistent with our results in Study 1A, there was no significant difference in choice likelihood when the choice was between hedonic value and sustainability (60:49), $\chi^2 = 1.11$, $p > 0.10$. Our analysis of choice across conditions, employing contrast codes for each condition, confirmed that choice depended on the trade-off type, $\chi^2 = 33.62$, $p < 0.0001$, such that sustainability is relatively more likely to be chosen in the context of a trade-off with hedonic value than in a trade-off with utilitarian value. This result is consistent with our analysis in Study 1A, and provides additional support for H1.

Once again, in an effort to gain insight into this effect, we performed a bootstrapped parallel mediation analysis, per Hayes (2013). The results were consistent with those found in Study 1A. Specifically, only confidence mediated the effect of trade-off type on choice at the 99 % confidence level (mean indirect effect = 0.6876, bias corrected and accelerated lower CI 0.2601, upper CI 1.3252; 5000 samples).

The Effect of Consumers' Attitude Towards Sustainability

A correlation analysis confirmed that ratings for the three questions about attitude towards sustainability were significantly correlated, Cronbach $\alpha = 0.81$; they were subsequently averaged to create a measure of AtS. Then, using logistic regression, we regressed choice on trade-off type, AtS and their interaction. While there were no simple effects of either AtS or trade-off type, $\chi^2 = 0.10$, $p > 0.10$ and $\chi^2 = 0.43$, $p > 0.10$, respectively, once again their interaction was significant, $\chi^2 = 4.11$, $p < 0.05$. Specifically, and providing additional support for H2, choice likelihood of the sustainable option was higher in the context of a trade-off with hedonic value (vs. utilitarian value) as consumers' attitude towards sustainability became more positive.

We repeated the set of emotion mediation analyses conducted in Study 1A and found the same pattern of results. Specifically, a bootstrapped moderated parallel mediation analysis, per Hayes (2013), suggested that within the hedonic trade-off condition, confidence was a significant mediator of the effect of AtS on choice at the 95 % confidence level (mean indirect effect = 0.3006, bias corrected and accelerated lower CI 0.0073, upper CI 0.7460; 5000 samples). Similar to Study 1A, there were no significant indirect effects within the utilitarian value trade-off condition; in other words, the emotional outcomes and consequences were similar for all participants, regardless of their attitude towards sustainability, when confronted with a trade-off between utilitarian value and sustainability. Likewise, we repeated the bootstrapped serial mediation analysis performed in Study 1A, per Hayes (2013), to better understand the mediation of the effect of AtS on Choice. As shown in Fig. 6, and consistent with Study 1A, three indirect path models were found to be significant: paths 2, 3, and 4. This suggests, once again, that the level of anticipatory Pride felt affects the levels of confidence and excitement felt, which in turn affects choice.

The Effect of Product Type

We conducted a final analysis to determine whether the effect of trade-off type on consumer response was moderated by product type, as predicted in H3. Using contrast codes to represent the Hedonic and Utilitarian Product Types, a logistic regression suggested that choice did not depend on product type, $\chi^2 = 0.42$, $p > 0.10$, nor on the interaction of product type and trade-off type. This result seems to suggest that the effect of trade-off type on consumer response holds regardless of whether the product is perceived to be relatively more hedonic (or utilitarian) in nature. However, it is plausible that the measurement scale we used to categorize our intended hedonic category (digital audio players) and utilitarian category (calculators)—Voss et al. (2003) hedonic/utilitarian scale—did not sufficiently reflect the relative hedonic/utilitarian nature of the attributes within these categories. Specifically, it is plausible that despite being identified as a relatively hedonic product category, digital audio players might not be an appropriately representative hedonic category given that product performance might still be deemed relatively more important than esthetics in this category (i.e., consumers may be more likely to sacrifice good looks before giving up on clear audio). Further, a plausible alternative explanation of the results supporting H1 thus far is that we have used product categories in which utilitarian attributes are deemed more important than hedonic attributes and, therefore, that our results simply reflect the relatively greater importance placed on utilitarian attributes in these categories.[2] Thus, we proceed with Study 2 to address this potential alternative explanation as well as to further investigate the effect of product type described in H3.

[2] We thank an anonymous reviewer for these observations and for proposing an appropriate design to test them, which inspired Study 2.

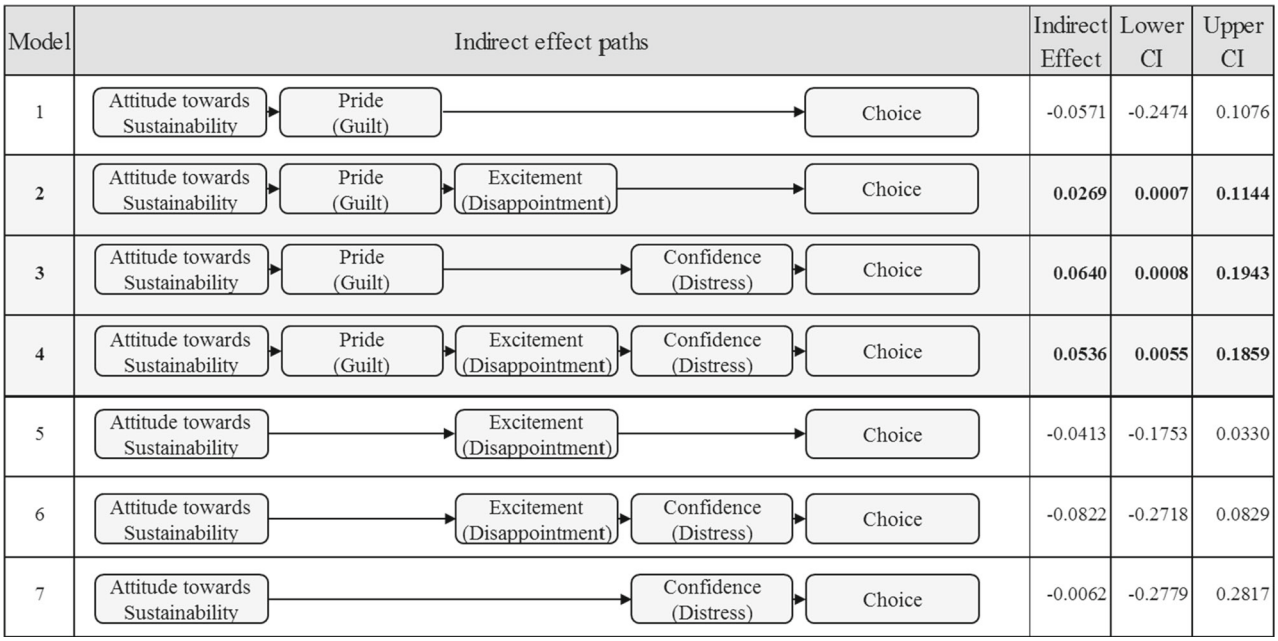

Fig. 6 In Study 1B, pride (guilt) had an indirect effect on choice through both excitement (disappointment) and confidence (distress). * Significant indirect effects paths (2, 3, and 4) noted in *bold* (confidence level = 95 %, 5000 samples)

Study 2: The Effects of Trade-off Type and Product Type Given Explicit Differences in Attribute Importance

The primary objective of Study 2 was to better understand the role and effect of product type (hedonic vs. utilitarian) relative to our focal effect of trade-off type, as described in H3. Further, Study 2 was also intended to address a potential alternative explanation for the effect of trade-off type on consumer response. Specifically, it is plausible that the effect of trade-off type is simply due to a difference in the perceived relative importance of performance and esthetic attributes in the product categories studied thus far, whereby consumers place more importance on performance attributes and, therefore, are less willing to trade-off performance (vs. esthetics) for sustainability. Therefore, in Study 2, we used product categories that explicitly differ with respect to the relative importance of hedonic and utilitarian attributes to ensure that hedonic (utilitarian) attributes are perceived to be more important than utilitarian (hedonic) attributes within our representative categories. Based on a pretest, we chose wristwatches and sunglasses to represent relatively more hedonic product categories, and coffee makers to represent relatively more utilitarian product categories. Beyond the pretest, we also measured perceived attribute importance within the current study to ensure the appropriateness of our stimuli. A final objective of this study was to demonstrate the effect of trade-off type with a different consumer response measure—relative purchase likelihood—in order to demonstrate the generalizability of our findings.

Stimuli and Procedure

One hundred and forty-one undergraduate students participated in this online study in exchange for course extra credit. Participants' first task was to choose one of the three product categories—watches, sunglasses, or coffee makers—based on whether they purchased a product from within the category in the last year or were likely to do so in the future.[3] This was done to increase the personal relevance of the product context for the balance of the survey. These categories were chosen to represent the two product types, hedonic (watches and sunglasses) and utilitarian (coffee makers). Next, to enable subsequent validation of the appropriateness of our stimuli and to explicitly consider attribute importance in our analyses, participants rated the importance of the various product attribute types within their chosen category on a scale from 1 (not at all important) to 7 (extremely important). In addition to providing importance ratings for 'aesthetics' and 'performance,' they also provided ratings for other attribute types, such as 'cost' and 'reliability.' These additional

[3] We intentionally over-represented the hedonic product type given the categories used in the prior studies and the objectives of the current study.

ratings provided some context and were intended to minimize the possibility that participants would infer the purpose of the study.

Next, after participants completed an unrelated filler task, they were presented with the focal rating task. Participants were randomly assigned to one of two trade-off type conditions. In the utilitarian trade-off condition, participants were presented with two product scorecards, each on a separate screen. Each scorecard, similar to the ones used in Study 1A and 1B, indicated the product's ratings for performance and sustainability on a scale of 0 (poor) to 10 (excellent). One scorecard indicated a trade-off in favor of product performance (a rating of nine for performance and five for sustainability), and the other indicated a trade-off in favor of sustainability (a rating of five for performance and nine for sustainability). After viewing each individual scorecard, participants rated their purchase likelihood from 1 (very unlikely) to 9 (very likely). Each scorecard was presented and rated on its own, with the order of presentation randomized. The hedonic trade-off condition was identical except that the product performance rating was replaced by a product esthetics rating. Therefore, this study used a 2 (product type: hedonic vs. utilitarian) × 2 (trade-off type: utilitarian vs. hedonic) between-subjects design.

Results

Replicating the Main Effect of Trade-off Type

Our analysis began by first addressing our focal effect of trade-off type on consumer response, i.e., independent of the potential effect of product type. We began by calculating our focal dependent measure of participants' relative purchase likelihood by subtracting their purchase likelihood rating for the product with a superior sustainability rating (and average esthetics/performance) from their purchase likelihood rating for the product with superior esthetics/performance (and average sustainability). This Relative Purchase Likelihood (RPL) reflects the degree to which participants are more likely to purchase a product with superior performance (or esthetics) versus one with superior sustainability. Thus, a positive (negative) score indicates a higher (lower) purchase likelihood when trading-off sustainability for greater performance/esthetics relative to trading-off performance/esthetics for greater sustainability.

In aggregate, participants' mean RPL was 2.72 when trading-off sustainability for performance, but only 1.17 when trading-off sustainability for esthetics. A *t* test of mean difference confirmed that RPL was significantly higher when trading-off sustainability for performance versus trading-off sustainability for esthetics, $t(1, 139) = 3.05$, $p < 0.01$. Thus, participants were especially unlikely to trade-off performance (vs. esthetics) for sustainability. Importantly, this result was found despite the intentional over-representation of hedonic products in Study 2. Further, in aggregate, there was no difference in the attribute importance ratings for performance ($M_{\text{Perf}} = 5.87$) and esthetics ($M_{\text{Aesth}} = 5.89$), $t(1, 140) = 0.10$, $p > 0.50$, implying that the effect of product type on RPL could not have been simply due to a difference in relative attribute importance. Indeed, using contrast codes, we regressed RPL on trade-off type while including attribute importance ratings for performance and esthetics as covariates; we found the same effect as before, as indicated by a significant effect of trade-off type in the expected direction, $F(1, 137) = 8.52$, $p < 0.01$. Overall, these results provide evidence that the focal effect of trade-off type on consumer response, as described in H1 and demonstrated in Studies 1A and 1B, is not simply due to a difference in relative attribute importance. Further, the use of a different response measure—relative purchase likelihood—helps to demonstrate the generalizability of our findings. Next, we explore the effect of trade-off type further while more explicitly considering the difference in relative attribute importance reflected in the different product types.

The Moderating Role of Product Type

While these results replicate our focal main effect, it is still plausible—and indeed likely—that differential attribute importance at the product category level would also influence consumer response given attribute trade-offs. Assuming so, we could then expect to find that the net effect of trade-off type would depend upon the type of product category. The question, however, is whether differential attribute importance explains the erstwhile effect of trade-off type, or instead whether it might moderate the effect, as predicted in H3. Thus, we proceed with an analysis of the joint effects of product type (Hedonic vs. Utilitarian) and trade-off type on RPL.

Participants' choice of product category was relatively evenly distributed across the three categories, with forty-one choosing watches, sixty-two choosing sunglasses, and thirty-eight choosing coffee makers. Our first step was to confirm that each category had the expected relative attribute importance. We calculated each category's relative attribute importance by subtracting the importance rating for performance from the importance rating for esthetics. Thus, a positive (negative) relative attribute importance score indicates a greater relative importance of esthetics (performance) within the given category. As expected, the mean score for watches ($M_{\text{Watch}} = 0.68$) and sunglasses ($M_{\text{Sun}} = 0.77$) was both significantly greater than zero (both $p < 0.001$). Thus, we combined the data for watches

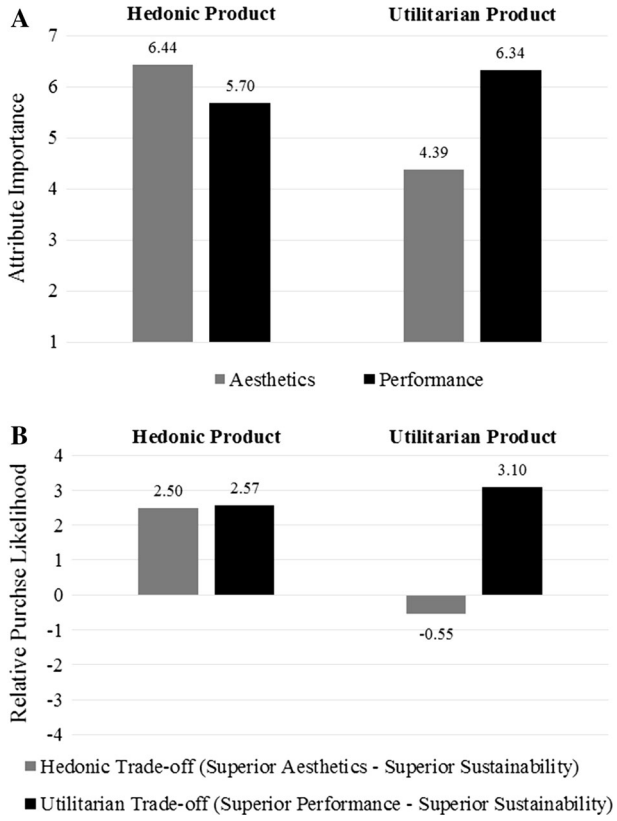

Fig. 7 *Panel A* attribute importance for hedonic versus. Utilitarian products (Study 2). *Panel B* relative purchase likelihood by product type (Study 2). Relative purchase likelihood reflects the difference in purchase likelihood between a product with superior esthetics/performance (and average sustainability rating) versus a similar product with a superior sustainability rating (and average esthetics/performance)

and sunglasses to represent the Hedonic Product Type.[4] As expected, the mean score for coffee makers ($M_{\text{Coffee}} = -1.94$) was significantly less than zero ($p < 0.0001$); therefore, we used this category to represent the utilitarian product type. The average attribute importance ratings for these two product types are illustrated in Fig. 7, Panel A.

Next, using contrast codes, we regressed RPL on trade-off type, product type and their interaction. Consistent with H1, we found that the simple effect of trade-off type was still significant, $F(1, 137) = 32.75$, $p < 0.0001$, such that participants were less likely to trade-off performance (vs. esthetics) for sustainability. However, we also found that the effect of trade-off type on RPL depends on product type, as indicated by a statistically significant interaction effect, $F(1, 137) = 30.38$, $p < 0.0001$. To better interpret these results, we investigated the mean RPL as a function of both product type and trade-off type, as illustrated in Fig. 7, Panel B. With the utilitarian product type, we see the expected pattern of a significantly higher RPL when trading-off performance (vs. esthetics) for sustainability, i.e., participants are less likely to trade-off performance (consistent with the pattern shown in Fig. 7, Panel A {right side}). On the other hand, with the hedonic product type, there is no difference in RPL between each trade-off type, as shown in Fig. 7, Panel B (left side). These results suggest that the effect of trade-off type is moderated by product type, such that the effect is stronger (weaker) within utilitarian (hedonic) product categories, thereby supporting H3. Had there been no effect of trade-off type within the hedonic product type, we would have expected to see the same pattern of results as shown in Fig. 7, Panel A (left side), whereby participants would have been relatively less willing to trade-off esthetics, given that esthetics was rated as more important within the hedonic product type. Instead, we see in Fig. 7, Panel B (left side) that there is no difference in RPL within the hedonic product type. In other words, even in categories in which hedonic value is significantly more important than utilitarian value, consumers may not be more willing to trade-off performance (vs. esthetics) for sustainability. While this is consistent with H1, it also demonstrates an important boundary condition described in H3: the effect of trade-off type on consumer response is attenuated (amplified) as the relative importance of hedonic (utilitarian) attributes increases.

General Discussion

Sheth et al. (2011) emphasize the need for researchers to understand how consumers make choices involving sustainability attributes, i.e., how consumers engage in "mindful consumption." Understanding consumers' product evaluations and choices is, in turn, critical for product and marketing managers, who must define what product options are available to consumers in the first place, ideally informed by an understanding of the trade-offs that consumers may be relatively more willing to accept. Towards that end, the current research studied consumer responses, including product choice, in the context of a trade-off between a product's sustainability and either its utilitarian value (e.g., functional performance) or its hedonic value (e.g., esthetics).

Across three studies, six product categories, and two different measures of consumer response, we provide evidence for our central thesis that consumer responses given a trade-off with, or in favor of, product sustainability depend on what being traded off (H1). Specifically, our results in Studies 1A and 1B suggest that consumers are more likely to choose a product that trades off hedonic value

[4] We combined these categories to simplify the exposition of the results. The pattern of results subsequently described, as well as the statistical significance of the results, remains the same when analyzing each category on its own.

(e.g., esthetics) for sustainability as opposed to one that trades off utilitarian value (e.g., performance) for sustainability. More simply, our results suggest that sustainability is relatively more likely to be chosen in the context of a trade-off with hedonic value than in the context of a trade-off with utilitarian value. Our results in Study 2 provide additional support for H1 and address a potential alternative explanation for our findings. Specifically, the results from Study 2, which used product categories that vary in the degree to which consumers explicitly rate hedonic attributes as more (or less) important than utilitarian attributes, suggest that these results are not simply due to differences in attribute importance.

We also provided evidence to support H2 and H3, in which we predicted that the effect of trade-off type is moderated by both individual- and category-specific characteristics. With respect to individual characteristics, our results in Studies 1A and 1B demonstrate that the effect of trade-off type depends on the degree to which consumers value sustainability attributes, as described in H2. Thus, the individual difference in consumers' attitude towards sustainability is an important boundary condition of the effect of trade-off type, relevant to both theory and managerial practice—both of which we address subsequently. In addition, studying the effect of consumers' attitude towards sustainability was important given our emphasis on the commensurate underlying variance in goal importance and anticipatory emotions as the theoretical basis for the effects studied in our research. With respect to category characteristics and the predicted moderating effect of product type, our results from Study 1B seemed to imply that the effect of trade-off type (H1) would hold regardless of the relative hedonic versus utilitarian nature of the product itself. However, in Study 2, we used additional product categories and a more stringent definition of product type, based on explicit differences in attribute importance, to demonstrate that the effect of trade-off type does depend on product type (H3). Specifically, our results from Study 2 suggest that consumers' more (less) favorable response to a trade-off with hedonic value (utilitarian value) is attenuated (amplified) as the relative importance of hedonic (utilitarian) attributes increases. In other words, our results from Study 2 demonstrate how the focal effect of trade-off type acts in concert with differential attribute importance to influence consumers' overall response given a trade-off with sustainability.

Theoretical Contributions

Within the context of ongoing calls for more research on ethical consumption (Vitell 2003) and recent calls for the continued development of sustainable consumption-related theory (Kotler 2011; Mick et al. 2012; Sheth et al. 2011), our research contributes primarily to the domain of decision making and, more specifically, attribute trade-off research (e.g., Chitturi et al. 2007, 2008; Okada 2005). Although preliminary, our results also provide some insight into the role of emotions in decision making (e.g., Luce et al. 1997; Pham 1998) specifically in the context of trade-offs with sustainability.

With respect to attribute trade-off research, prior research has studied trade-offs between utilitarian and hedonic product attributes (e.g., Dhar and Wertenbroch 2000; Shiv and Fedorikhin 1999) and has demonstrated that choice and its emotional antecedents can be explained in part by regulatory focus theory (Higgins 1997). Our results contribute to this research stream by extending prior demonstrations of the principle of precedence (Berry 1994), which suggests that utilitarian value is often chosen over hedonic value since "people feel obliged to fulfill functional needs first before attempting to fulfill hedonic wants (p. 706)" (Chitturi et al. 2007). However, as opposed to presenting consumers with a direct trade-off between hedonic and utilitarian value, we show that utilitarian value is relatively more likely than hedonic value to be chosen in a trade-off with sustainability. Thus, our work extends and integrates research on attribute trade-offs with the growing body of research on sustainable consumption (Phipps et al. 2013; Prothero et al. 2011). We also provide evidence of the important role of emotions in this context, which we elaborate on subsequently.

Our findings are also conceptually consistent with research by Berens et al. (2007) who show that poor product quality cannot be compensated by a positive CSR assessment. Although product quality is not the same as product performance, they are both relatively more utilitarian (vs. hedonic) in nature and therefore may contribute to similar emotional and behavioral consequences. Further, we show that in the context of a trade-off with sustainability it is important to consider individual differences such as consumers' attitude towards sustainability. This individual difference factor is analogous to prior research that has demonstrated that consumers also vary in the degree to which their responses to products are influenced by visual product esthetics (Bloch et al. 2003). Importantly, we also provide evidence that the effect of individual differences in the current context may be limited to certain types of trade-offs. In the context of a trade-off with utilitarian value, even a relatively positive attitude towards sustainability may not have an effect on consumer response. In other words, it seems as though consumers may be unwilling to trade-off performance for sustainability, regardless of their attitudes towards sustainability.

Our findings also provide some insight into the emotions underlying the effects we have studied. In particular, the pattern of emotions shown in Fig. 4 is consistent with the

logic presented in our hypothesis development. Simply put, consumers may be more likely to trade-off hedonic value (vs. utilitarian value) for sustainability given that choosing hedonic value over sustainability would induce even less pride and less confidence than choosing utilitarian value over sustainability—especially as their attitude towards sustainability becomes more positive.[5] Specifically, participants' higher anticipatory pride felt towards the more sustainable product appeared to be greatest among participants with a highly positive attitude towards sustainability, but only in the context of a trade-off with hedonic value, not utilitarian value. This pattern of emotions was consistent with our findings with respect to product choice, yet our analysis suggested that the difference in confidence was the dominant mediator of the effects demonstrated in our studies, and not pride. However, post hoc analyses from Study 1A and Study 1B provided an intriguing possibility about the role of pride. Specifically, those analyses suggest that while confidence appeared to be the dominant emotion dimension, most proximal to choice in the current context, its effect may itself be dependent on pride and excitement. In other words, the effect of pride may have been indirect. This finding is consistent with the Appraisal Tendency Framework, or ATF (Han et al. 2007) which posits that emotions result from people's cognitive appraisals of a situation (Lazarus 1991; Smith and Ellsworth 1985) and the resulting emotions can influence subsequent behaviors, such as judgment and choice. Winterich et al. (2010) extended the ATF by demonstrating that the emotions elicited by the appraisals can, in turn, influence subsequent emotional responses and behaviors. In other words, they demonstrate how the experience of one emotion can affect subsequent emotional responses and, ultimately, subsequent behaviors (see also Neumann et al. 2001). Specifically, Winterich et al. (2010) demonstrated that sadness can thwart the subsequent experience of anger, an effect that they refer to as "emotional blunting." Our demonstration of an analogous blunting effect of pride on excitement and on confidence is consistent with this extended model of ATF. This interpretation of our results is somewhat speculative and more research is needed, however, especially in light of some prior research suggesting that guilt appeals in particular may have a limited effect on consumer behavior (Bennett 1998; Peloza et al. 2012; Thøgersen 2005). Nonetheless, we believe that these results provide some important insight into our focal effects and they substantiate our theoretical reasoning. Further, they present very promising opportunities for future research on sustainable consumption which is needed given the inherent complexity and conflicting emotions experienced within this unique context (Phipps et al. 2013).

[5] For simplicity, we refer to each of the three emotion dimensions (pride–guilt, confidence–distress, and excitement–disappointment) by its positively valenced anchor.

Managerial Implications

Our findings have important implications for product design and development, marketing strategy, and marketing promotion decisions. With respect to product design and development, our results supporting H1 suggest that products that achieve superior sustainability at the expense of utilitarian value are more likely to be at a disadvantage than those that trade-off hedonic value for sustainability. While trade-offs between sustainability and other product attributes are not given, trade-offs are typical in the design process, and trade-offs with sustainability are even assumed by consumers within some types of product categories (Luchs et al. 2010). Thus, our findings provide some guidance to managers and project teams as they make trade-off decisions in the early stages of a project. In a related sense, understanding the trade-off effect is also important from a strategic perspective as firms consider resource and capability investments. If a company or brand is especially interested in promoting its concern for sustainability as a market differentiator, our results suggest that they should be focused on developing or acquiring a very strong technical capability, as opposed to over-relying on a superior industrial design capability.

Importantly, our findings supporting H2 qualify the effect of trade-off type, suggesting that it is stronger (weaker) as consumers' attitude towards sustainability becomes more (less) positive and, per H3, as the relative importance of utilitarian attributes within the product category increases (decreases). Thus, our findings are important from a marketing strategy perspective as managers and teams make decisions about product–market selection, as well as consumer segmentation and targeting. Our results suggest that beyond targeting appropriate market segments, brands that promote sustainability should also consider the importance of hedonic and utilitarian attributes within the category relative to their capability to mitigate product attribute trade-offs. For example, it would be especially important for such a brand to have strong technical expertise, versus industrial design expertise, when pursuing a product market such as running shoes, in which the perceived importance of performance is likely greater than the perceived importance of esthetics. However, having strong technical expertise is not sufficient; it also needs to be actively promoted. Indeed, one of the reasons cited for the limited success of Nike's pro-sustainability 'Considered' product line was that they did not sufficiently promote the high performance of the shoes (Rice 2013).

This does not mean, however, that product esthetic design is unimportant in this context; instead, our findings can

give companies some latitude in reconsidering specifically how esthetic design contributes to the successful marketing of sustainable products. Relatively recent research has demonstrated that consumers may be motivated to purchase pro-environmental products because doing so is a costly signal associated with status and thus creates social value (Green and Peloza 2011; Griskevicius et al. 2010). For this signal to be effective, the product must be intentionally designed to be visually differentiated from mainstream products. While designing a product to appear visually distinct can be risky, our research suggests that companies do indeed have some latitude to pursue a differentiated esthetic design strategy in this context. Even if the product is viewed as being somewhat esthetically inferior to competing products, our research suggests that this is a trade-off that may not deter consumers who especially value sustainability.

Beyond optimizing a product's design to improve its market acceptance, companies can also benefit from the current research by considering the role of emotions in consumers' decision process. In addition to addressing potential deficits in consumer confidence faced by sustainable products, the results from our post hoc analyses of Study 1A and Study 1B provide preliminary evidence suggesting that focusing on pride may also be fruitful. Specifically, rather than relying exclusively on a defensive strategy to counter the sustainable product's shortcomings, an offensive strategy that promotes pride in purchasing the sustainable product may blunt the erstwhile emotional benefits provided by competing products. For example, within the context of a very competitive market, Toms Shoes has successfully promoted pride through their "One for One movement (which) is about people making everyday choices that improve the lives of children" (Toms Shoes 2012).

While we believe that the current research provides some important guidance for firms interested in developing and promoting relatively more sustainable products, there is still much to learn. Our hope is that the current research inspires new research focused on developing an even better understanding of how consumers respond to sustainability in the context of the increasingly information-rich consumer marketplace.

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